

MISSOURI. Conservationist

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Leader in Hunter Recruitment

Conservation makes Missouri a great place to hunt. Today, Missouri has a population of 6 million. Within this number are 800,000 hunters. The number of Americans who hunt has declined slowly

in recent decades. However, Missouri has the nation's highest hunter replacement ratio.

Missouri is one of only six states with a positive hunter replacement ratio, replacing every 100 lost hunters with 116 new hunters. This is accomplished, not with a silver bullet approach, but with a long-term approach to make hunting and shooting opportunities more available and accessible to all residents of our great state.

Today the Department has five staffed shooting and 70 unstaffed shooting ranges. The Department has also provided funds and equipment for numerous school, municipal and other ranges open to the public. All together, an estimated 350,000 shooters per year enjoy these facilities across the state. To read more about our shooting ranges, turn to Page 8.

Since 1957, Missouri helped to make hunting a safe form of recreation through Hunter Safety and now Hunter Education Certification. Missouri has certified more than 1.13 million hunters through this public safety program. Hunter education helps make hunting one of the safest activities the family can enjoy. Every year Missouri's Hunter Education Program is one of the top four in the nation for its number of Hunter Education graduates, thanks in great part to the dedication of more than 1,200 volunteer instructors.

Of course the Department has long been a source for free public hunting programs to train and educate non-hunters, new hunters and experienced hunters alike on all aspects of outdoor skills, wildlife, habitat, hunting skills, equipment, new techniques, game care, cooking, special educational hunts and shooting sports. With such a wide range of programs we are better able to serve our diverse citizenry—providing more opportunities for a greater number of Missourians to discover and participate in hunting.

The Department is not only a leader in providing opportunities to train hunters, but also in reducing barriers to participation in hunting. The Department has taken a number of steps in recent years to make it easier for youth and adults to get involved, including:



» Establishing special youth hunting seasons for deer, turkey, quail, waterfowl and pheasants, where mentoring adults can focus their efforts on teaching, and where the probability of successful youth harvest is greatest.

» Maintaining free small-game hunting and reduced-cost deer and turkey permit prices for resident and non-resident youth under age 16.

» Implementing online hunter education courses with associated hands-on field days for those who pass the required test after independent study.

» Introducing the Apprentice Hunter Authorization, which allows persons 16 years old or older to hunt with a mentor for up to two years.

Missouri provides world-class wildlife hunting opportunities in a range of hunting seasons (deer, small game, turkey and waterfowl). It continues to be a state where hunting access is readily available not just on private lands, but on conservation areas as well. To explore conservation areas and hunting opportunities near you, visit mdc.mo.gov/node/8911.

These and many more reasons have the National Shooting Sports Foundation, the National Wild Turkey Federation, and the U.S. Sportsmen's Alliance listing Missouri as one of the least restrictive states in the nation for hunters and hunting recruitment.

With ceaseless innovation, strong mentoring and education, the Department, in partnership with the citizens of Missouri, continues to make this state a great place to hunt—enriching both our quality of life and our economy. If you would like to learn more about hunting in Missouri, please visit mdc.mo.gov/node/88.

A handwritten signature in black ink, reading "Robert L. Ziehmer".

Robert L. Ziehmer, director



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TRADESCANTIA

Great August magazine! I would like to know the name of the beautiful flower on Page 14, in the *Clearing the Water* article. And where does this flower grow?

Betty Harris, St. Joseph

Ombudsman's note: The wildflower on Page 14 is one of our eight species of spiderwort (genus Tradescantia). The plant in the photo appears to be Tradescantia ohiensis, which occurs statewide in a variety of habitats. Here is a link to more information on that wildflower: www.missouriplants.com/Bluealt/Tradescantia_ohiensis_page.html. —Tim Smith

THE NATURE OF FREEDOM

I'm sitting here in Afghanistan, some 7,000 miles away from Missouri, looking at the May issue of the *Conservationist*. It brings a lot of joy looking at pictures of the Missouri outdoors, with all of its wildlife, waterways and countryside, reminiscing about the places we see and where we have been, and amazingly enough, places we never knew existed!

We have been in Afghanistan for almost 10 months now [in June], and I can only remember seeing a couple of small gray foxes. No deer, rabbits, squirrels or much of any waterfowl with the exception of a few ducks. Only in a very few areas do you see any semblance of forests, rivers, lakes or streams. We have heard that there are some fish located close to

one of the few dams in the country—so few that most people in this area consider fish a delicacy, too expensive to buy.

It's not that the country does not have the potential to have these things we sometimes take for granted, in fact, they did before the 30-plus years of war and internal civil war. Obviously this country has experienced devastating events, but we can use this as a glimpse of what happens, or what can happen, when you do not have a managed conservation program like the one we have and enjoy in Missouri.

We keep the magazine in a common sitting area on our base, and it is amazing how even the Afghan interpreters marvel at our resources. Ronald Reagan once said that "freedom is never more than one generation away from extinction." I think this can also apply to conservation in that we are only one generation from losing what we in Missouri, and the rest of the country, enjoy so much—the forests, bluffs, waterways, and an abundant, healthy and diverse wildlife population.

Thank you to the people of Missouri for supporting the Conservation Department. Thank you to the Department for creating and managing one of the best conservation programs in the U.S.

SFC Dan Thompson

MOANG ADT IV, via Internet

BUTTERFLY MAGIC

On August's back cover, "I Am Conservation" noted that Springfield was recognized as the first community in Missouri to achieve the Governor's Children in Nature Community award. However, I did miss the description and location of where the photograph was taken. The photo was taken next to the Bill Roston Native Butterfly House in Close Memorial Park, the site of the Springfield-Greene County Botanical Center. The name of this Playtrails pod is Butterflies the Magic of Metamorphosis, representing the four-stage life cycle of the monarch butterfly. The concept for this design was suggested by Katie Steinhoff, our botanical center coordinator.

On your next trip to Springfield, stop by the Springfield-Greene County Botanical Gardens & Complex, 2400 S. Scenic Ave. For more information, visit www.friendsofthegarden.org.

*George Deatz, president
Friends of the Garden*



Reader Photo

FALL COLORS

Kati Medling, of Sullivan, captured this image of New England aster at Shaw Nature Reserve in Gray Summit. Medling said she and her four-year-old daughter, Kennedy, are: "avid hikers, nature photographers and outdoors women. We frequent many public nature areas during all seasons of the year to experience wildlife and plant life in their many stages and phases." Medling said that she often uses the photos they take as a teaching tool. "The Missouri outdoors provide incredible and affordable opportunities for us to have mother-daughter bonding time and appreciate our surroundings," said Medling.



DEPARTMENT HEADQUARTERS

Phone: 573-751-4115
Address: PO Box 180,
Jefferson City 65102-0180

REGIONAL OFFICES

Southeast/Cape Girardeau: 573-290-5730
Central/Columbia: 573-884-6861
Kansas City: 816-655-6250
Northeast/Kirksville: 660-785-2420
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SUBSCRIPTIONS

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OMBUDSMAN QUESTIONS

Phone: 573-522-4115, ext. 3848
Address: Ombudsman, PO Box 180,
Jefferson City 65102-0180
E-mail: Ombudsman@mdc.mo.gov

EDITORIAL COMMENTS

Phone: 573-522-4115, ext. 3847 or 3245
Address: Magazine Editor, PO Box 180,
Jefferson City 65102-0180
E-mail: Magazine@mdc.mo.gov

READER PHOTO SUBMISSIONS

Address: Missouri Conservationist, Reader Photo,
PO Box 180, Jefferson City 65102-0180
E-mail: Readerphoto@mdc.mo.gov

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CONSERVATIONIST STAFF

Editor In Chief Ara Clark
Managing Editor Nichole LeClair Terrill
Art Director Cliff White
Staff Writer Bonnie Chasteen
Staff Writer Jim Low
Photographer Noppadol Paothong
Photographer David Stonner
Designer Stephanie Thurber
Artist Mark Raiethel
Circulation Laura Scheuler

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NEWS & EVENTS



Deer Hunting Regulations Change

Hunters will find this year's fall deer and turkey hunting regulations much the same as last year. Exceptions include the timing of the Early Youth Portion of Firearms Deer Season and new counties where unlimited antlerless permits are available.

In the past, the early youth hunt has coincided with Halloween. This year, the Conservation Commission moved the early youth hunt to Nov. 5 and 6, avoiding this conflict. Public comments played a direct role in this adjustment.

Changes to this year's deer regulations include:

- » Boundaries of the Kansas City and Columbia/Jefferson City urban zones have been adjusted to better define where increased opportunity for antlerless harvest is desirable and give hunters and landowners the ability to manage local deer populations effectively.

- » The Antler Point Restriction now applies to the northern portion of Platte County not included in the Kansas City urban zone. This adjustment is supported by landowners and sportsmen and

is consistent with the application of the Antler Point Restriction in other urban zones.

- » Unlimited Archery Antlerless Permits are now available in Bollinger, Madison and Wayne counties.

Harvest data, hunter surveys and other citizen input show that deer numbers in parts of central, northern and western Missouri have stabilized or declined in recent years. Hunters and landowners determine deer harvest in areas where unlimited antlerless permits are available. The availability of unlimited antlerless permits in a particular county does not mean that hunters need to harvest more does there. It simply allows hunters and landowners—who know their local situations best—to adjust deer harvest to achieve their goals.

New regulations are in effect on some MDC areas. These and other changes are explained in the *2011 Fall Deer & Turkey Hunting Regulations and Information* booklet, which is available from permit vendors or as a PDF to download at mdc.mo.gov/node/3656.

Fun and Safe Dove Hunting Season

Looking for a place to hunt during Missouri's 70-day dove season? Visit mdc.mo.gov/node/3607, and take your pick of 150 specially managed dove fields on approximately 90 conservation areas statewide. Maps also are available from Conservation Department regional offices. Most conservation areas have sunflower or other agricultural crop fields that provide excellent forage for doves and other upland birds. These dove magnets also draw lots of hunters, so mind your manners, and keep safety foremost in mind. Stand at least 50 yards from other hunters, and pass up shots that are not at least 45 degrees above the horizon. Before leaving, hunt up all your empty hulls and take them with you. Littering is a crime.

Young Shooters Help Joplin

Storm-ravaged Joplin was the beneficiary of a benefit fundraiser put on by MDC's Jay Henges Shooting Range in St. Louis County. Team Henges, a 22-member competitive trapshooting team led by coaches Jan Morris and Pat McCart, conducted the fundraiser June 4. Team members, who are age 11 through 18, solicited donations of up to \$1 for every clay target broken during the event. When the smoke cleared, they had raised \$1,107 for the American Red Cross Joplin relief effort. Team members also gathered donations of supplies, including flashlights, batteries, hammers and chainsaw bar oil, to help tornado victims. Team Henges has earned national honors in shooting competitions sponsored by the Scholastic Shooting Sports Foundation.

Bill Crawford, Master Conservationist

Retired Wildlife Research Chief Bill Crawford joined the ranks of Missouri's Master Conservationists at a ceremony held at Runge Conservation Nature Center July 15.

The Moberly native's involvement in conservation began in 1935, when he and his father joined other citizens at a meeting to set up Missouri's nonpolitical conservation program. His professional career began in 1941, when he signed on as an aquatic biologist for the Conservation Department. In 1949 he became the first chief of wildlife research, a position where he continued to provide leadership for 34 years. Crawford also cofounded the Missouri Prairie



Bill Crawford (center) receiving a Master Conservationist award July 15 from former Commissioner William F. "Chip" McGeehan (left) and Conservation Department Director Robert L. Ziehmer.

Foundation (feature article on the foundation starting on Page 8) with longtime friend Don Christisen in 1966 to help protect Missouri's native grassland habitat and wildlife.

"Every part of Missouri conservation has been touched by Bill Crawford," said MDC Director Robert Ziehmer. "Mr. Crawford wisely, strategically and productively invested an entire lifetime creating, building and guiding Missouri's Conservation agency."

The Master Conservationist award is the highest honor given by the Conservation Commission. The Commission established the award in 1941 to honor individuals who have made substantial and lasting contributions to Missouri's fisheries, forestry or wildlife conservation.

Pomme de Terre Lake

Follow-up testing at Pomme de Terre Lake has given the southwest Missouri lake a clean bill of health regarding zebra mussels. Recent tests showed that earlier positive readings from the 7,820-acre lake were false. The news emphasizes the important role boaters and anglers play in preventing the spread of invasive species. To keep Pomme de Terre and other uninfested Missouri waters free of zebra mussels and other exotics, the Conservation Department urges anglers and boaters to take the following precautions.

» **Clean**—Remove all plants, animals and mud, and thoroughly wash everything, especially live wells, crevices and other hidden areas. Wash boat bilges, trailers, motor drive units and



ASK THE OMBUDSMAN

Q: What are the webs that I'm seeing at the ends of tree branches? Will they harm the trees?

A: You are seeing the silken webs of a small, white moth that occurs throughout Missouri, called

the fall webworm moth. Its larval stage, the caterpillar builds the silken nests on the branches of many species of deciduous trees in late summer and fall. In Missouri, pecans, walnuts, hickory, elms, persimmon, sweetgum and fruit trees are preferred hosts. The caterpillars will feed on the leaves of the tree and can defoliate branches. Usually not significantly harming the tree, the unsightly webs are more of an aesthetic issue than a plant health problem.

Q: I heard that birds can eat fertilized fish eggs from one pond and then, through their droppings, "seed" another pond with those eggs. Is that true?

A: The digestive process and the anaerobic conditions that the fish eggs would experience in the bird's gut would be fatal. It may be possible for fish eggs to be moved by birds if the eggs were stuck to their feet or, more

likely, contained in vegetation transported by a bird. A lot of things would have to go right for that to occur and it would certainly be very uncommon. When fish appear in an unstocked pond, it is usually the result of wild fish moving upstream or downstream from other ponds or streams in the watershed during wet periods or due to intentional stockings.



Silken webs from the webworm moth

Ombudsman Tim Smith will respond to your questions, suggestions or complaints concerning Department of Conservation programs.

Write him at PO Box 180, Jefferson City, MO 65102-0180, call him at 573-522-4115, ext. 3848, or e-mail him at Ombudsman@mdc.mo.gov.

live wells with hot water at least 104 degrees. Most commercial car washes meet this standard.

» **Drain**—Eliminate all water before leaving the area, including live wells, bilge and engine cooling water.

» **Dry**—Allow boats and other equipment to dry in the sun for at least five days before launching in other waters.

Anglers can also avoid spreading zebra mussels and other invasive pests by obtaining live bait locally and disposing of leftover bait properly. Even things as seemingly harmless as earthworms and crayfish can be trouble. Some commercial bait comes from as far away as Canada. If you catch minnows in one place and take them somewhere else to fish, you could be transporting invasive

Asian carp species without knowing it.

When you are done fishing, put leftover bait in a trash container headed for the nearest landfill before leaving your fishing area. Never toss live bait into a lake or stream to feed the fish.

For more information on zebra mussels and other invasive species, visit mdc.mo.gov/node/4088.

Fur Trapping Clinics

A series of nine clinics throughout the state in September and October will give Missourians a chance to learn about the historic and practical sides of Missouri's first industry, fur trapping. The Missouri Trappers Association (MTA) is offering one- to three-day workshops in each of its nine regions. Participants will learn about equipment, setting traps, dispatching animals humanely, caring for fur after harvest and much more. Besides classroom instruction, participants will get to help run a live, working trap line. For details, visit missouritrappersassociation.org.

Ducks, Hunters, Another Good Year

The U.S. Fish and Wildlife Service (USFWS) says North America's breeding duck population topped 45.6 million this year. That is an 11 percent increase from last year and 35 percent above the average since 1955. This was only the fifth time in the survey's history that the total duck population exceeded 40 million. Population estimates for individual species include:

- » 9.18 million mallards, up 9 percent from last year.
- » 8.95 million blue-winged teal, up 41 percent
- » 4.43 million northern pintails, up 26 percent
- » 4.32 million scaup, up 2 percent
- » 3.25 million gadwall, up 9 percent
- » 692,000 canvasbacks, up 18 percent

Only three species—scaup, northern pintail and American wigeon—remain below North American Waterfowl Management Plan population goals.

This year's good news is a reflection of good weather. Snow and rainfall in Canada and the northern United States filled ponds and kept grasslands in good condition for nesting ducks. However, the good weather masks some bad

Duck Hunters Have an Extra Month to Plan for Waterfowl Season

Missouri duck hunters will have the opportunity to plan their fall duck hunting further in advance due to a recent Conservation Commission decision to use formulas to set duck season dates. Previously, Missouri duck hunters had to wait until late August to find out the timing of duck season. Now, hunters will know duck season dates in late July, just as soon as the U.S. Fish and Wildlife Service (USFWS) announces if the upcoming season will be Liberal (60 days), Moderate (45 days) or Restrictive (30 days). Once hunters know what option the USFWS offers, they will be able to apply the appropriate formula to determine season dates. The formulas established by the Commission are as follows:

	60-Day	45-Day	30-Day
North Zone:	Last Saturday in Oct.	1st Saturday in Nov.	2nd Saturday in Nov.
Middle Zone:	1st Saturday in Nov.	2nd Saturday in Nov.	3rd Saturday in Nov.
South Zone:	Thanksgiving	1st Saturday in Dec.	2nd Saturday in Dec.

For the 15th consecutive year, the The USFWS is offering a 60-day season in 2011–12. Based on the formulas approved by the Commission, the 2011–12 duck season dates will be:

North Zone: 29 October–27 December

Middle Zone: 5 November–3 January

South Zone: 24 November–22 January



Mallards

news. Nesting cover across the Prairie Pothole Region continues to decline, particularly on the U.S. side of the border. Large tracts of former Conservation Reserve Program (CRP) grasslands have been converted to cropland since last year. Expiring CRP contracts and high commodity prices driven by other economic factors are pushing these conversions.

Missouri hunters' success will depend, as it always does, on favorable weather during the hunting season. Wetland conditions on the states' managed wetland areas were highly variable due to flooding in some locations and drought in other regions as this issue of the Conservationist went to press. Up-to-date information about hunting conditions is available at mdc.mo.gov/node/9619.

Bass Tournament Cheating

A Warsaw man faces a felony charge for allegedly trying to weigh-in fish that he caught before a fishing tournament began.

David R. Gann, 72, entered a family-style bass tournament on Truman Lake June 4. A few days earlier, anglers setting trot lines at Truman Lake found a wire box containing three largemouth bass. They notified conservation agents, who located the fish box and marked the fish for later identification.

On the day of the tournament, the agents said, they watched Gann remove fish from the box and put them in his boat's live well. After Gann weighed in his fish, conservation agents and officers from the Missouri State Highway Patrol—Water Patrol Division took possession of the fish, which included ones they had marked. Conservation agents issued misdemeanor citations to Gann, one for wanton waste of a fish that died in the box and another for having an unlabeled live box in the water. Prosecutor Karen Woodley filed an attempt to steal by deceit charge against Gann in Benton County Circuit Court. Gann was arraigned on June 28 and entered a not-guilty plea.

The misdemeanor charges are punishable by up to one year in jail and fines of up to \$1,000. The Class D felony charge is punishable by up to four years in prison and a \$5,000 fine. Anyone spotting a possible fish and wildlife code violation can make an anonymous report by calling the Operation Game Thief hotline, 1-800-392-1111.—by Bill Graham

Did You Know?

Conservation pays by enriching our economy and quality of life.

Fine Money Supports Missouri Schools

» **Fine money** from *Wildlife Code* violations go to a designated school fund in the county where the violations occurred.

» **\$554,383** in fines were collected from violations observed by conservation agents in 2010.

» **Fines are assessed by courts** and not the Missouri Department of Conservation. Eighty Missouri counties have joined the Fine Collection Center, which processes fine collections for guilty pleas. However, the monies still go to the school fund for the respective county.

» **Citation fines are not a revenue source** for the Missouri Department of Conservation.

» Once a citation is given to a violator, **the county in which the violation occurred is responsible for due process and fines.**

Gene Tichacek Gives Back

A long-time waterfowl hunter and fisherman, Eugene J. (Gene) Tichacek has a lot of stories to tell. A resident of St. Louis, Gene fondly remembers going on hunts with his father as a boy with BB gun in tow. After receiving an honorable discharge from the Marine Corps in 1957 and enrolling at Saint Louis University, Gene's hunting adventures included not only his father but also college buddies.

Their destinations included such locations as Duck Creek Conservation Area (CA) in southeast Missouri and Fountain Grove CA in north-central Missouri. He fondly remembers the camaraderie among fellow hunters during the blind draws in the wee early morning hours of a chilly fall day. "I remember many a time we'd sleep in sleeping bags in my father's station wagon and catch a few winks before the blind draw," Gene said. "And sometimes it wasn't easy finding your blind in the dark. I remember George Brakhage, who managed Duck Creek CA at the time. He did an outstanding job and was a credit to the department. Those were just great times that I'll never forget."

During the more than 50 years since, Gene has taken great satisfaction in passing on a love of and

appreciation for wildlife and the outdoors to his sons and grandsons. With a desire to give back for, in Gene's words, "the many wonderful days of fishing and hunting enjoyment for four generations of Tichaceks," Gene's family trust made a gift to the Missouri Conservation Heritage Foundation that funded the Department of Conservation's construction of two disabled accessible blinds (one a wildlife viewing blind, the other a hunting blind) at Columbia Bottom Conservation Area in St. Louis County.

Gene is delighted that this donation has made possible the viewing of wildlife, outdoor photography and hunting accessible to disabled persons—adults and children alike. "The blinds turned out fantastically," Gene said. "This gives everyone a chance to enjoy nature and create lifelong outdoor memories."—by David McAllister



Gene Tichacek



The Missouri Prairie Foundation's
Golden Prairie in Barton County is a
National Natural Landmark.

For 45 years, the Missouri Prairie Foundation
has sparked public interest in protecting the state's
remaining prairie treasures.

Lighting a Fire for Prairie

by CAROL DAVIT • *photos by* NOPPADOL PAOTHONG



FORTY-FIVE YEARS AGO, A SMALL GROUP of Missourians held a meeting at Boone Tavern in Columbia to talk about prairie. Or rather, the disappearance of it.

This was 1966, nearly 100 years after the introduction of the first steam-powered tractor, which marked the beginning of accelerated land conversion to row crops. Even before statehood, the plow had begun turning over Missouri's inheritance of 15 million acres of tallgrass prairie. By mid-20th century, 1 percent of the state's original prairie was all that remained. The vast native grasslands that once rolled unbroken across much of Missouri were gone, and remaining fragments were isolated, their wildlife value much diminished.

Members of the group were alarmed at the loss of prairie—an ecosystem that once covered at least one-third of the state. Among the citizens in the group were its founders, Bill Crawford and the late Don Christisen, who were also career biologists with the Department of Conservation.

"In those days, the Department's funding for prairie acquisition was limited," said Crawford, "and there was little awareness among the public about how quickly prairie was disappearing. So we asked, 'What about prairie?' and citizens all over the state signed up as members. We started a fire. Prairie had been a forgotten resource, but the Missouri Prairie Foundation came along at the right time."

Saving Prairies

The Missouri Prairie Foundation's first members, including its first president, the physician Dr. Maurice Lonsway of St. Louis, were determined to save prairie and help Missourians understand the importance of doing so. An article in the *Missouri Conservationist* helped inform the public about the new organization.

In 1969, the Foundation had enough money to mail out a typewritten member newsletter, but not much else. So when it borrowed \$10,000 to buy the 40-acre Friendly Prairie that was for sale in Pettis County, it was a big deal. "That purchase," wrote long-time Foundation member Joel Vance, "showed the world that [the Foundation] was serious about putting cash on the line."

A few years later, the Foundation went on to buy Golden Prairie in Barton County, named

Why Prairie Matters

- ▶ Temperate grasslands of the world, including Missouri's remaining tallgrass prairies, are the most endangered and least conserved of any major terrestrial habitat on earth. Missouri's remaining prairies are stunning in their ecological wealth and complexity, and they, and all their components, are ours to conserve for the benefit of future generations.
- ▶ In addition to their immeasurable beauty, Missouri's prairie provides habitat for hundreds of native plant species, thousands of invertebrates (including as many as 400 different pollinating insects) and dozens of vertebrate animals.
- ▶ Prairie plant roots, some growing as deep as 15 feet, build and anchor rich soil.
- ▶ One acre of prairie can store at least 1 ton of carbon every year. (University of Minnesota)
- ▶ According to research at the University of Iowa, 1 acre of established prairie can produce 24,000 pounds of roots.
- ▶ Prairie can absorb a large volume of rainfall before runoff occurs, thereby naturally filtering water, protecting streams from flood events and helping to recharge precious groundwater supplies.

Trying to recreate the environmental services that prairies provide would be prohibitively expensive—and not nearly as biologically diverse.

a National Natural Landmark in 1975. Golden, now 630 acres, is today part of a 1,100-acre block of private land managed by the Foundation.

Through the support of its members and other private sources, the Foundation has continued to acquire and protect land over the past four decades. The organization now owns 2,600 acres of land in 15 tracts across the state. Through constant and vigilant management—including invasive species control, tree removal and prescribed fire—the Foundation maintains a high level of biodiversity on prairies it owns. Several Foundation properties are managed by the Department, and several Department prairies, and those owned by other partners, including Kansas City Parks and Recreation, benefit from invasive species control provided by the Foundation's prairie operations manager—one of the Foundation's only two staff members.



In late 2010, the Foundation acquired its most recent tract, an 80-acre property next to its Coyne Prairie in Dade County. It has begun an ambitious restoration plan for the tract, which will enlarge the prairie landscape in the area, part of the Golden Grasslands Conservation Opportunity Area.

Grassroots Advocacy— for Grass Roots

In addition to conserving thousands of acres of prairie through land ownership and management, the Foundation has protected thousands more through its outreach, advocacy and education efforts. In the 1970s, the Foundation and other conservation groups successfully advocated for the establishment of Prairie State Park in Barton County, the first parcel of which was purchased in 1980. Today, at nearly 4,000 acres, the park is Missouri's largest publicly owned prairie.

Emeritus board member Lowell Pugh, of Golden City, has fond memories of his decades-long friendship with Don Christisen, the Foundation's co-founder. "We were the first Missourians to talk with Katherine Ordway about prairie conservation," said Lowell. In 1972, Pugh and Christisen escorted Ms. Ordway, the famous prairie philanthropist from the East Coast, from the Springfield airport to tour Barton County prairies. Shortly after her visit with Pugh and Christisen, Ms. Ordway provided funds for The Nature Conservancy to begin purchasing prairie tracts.

In 1998, the Missouri Prairie Foundation spearheaded the formation of the Grasslands Coalition—20 conservation groups and private landowners working together to pool resources and make a lasting impact on landscape-scale, viable native grasslands. The Coalition identified several "Prairie-Chicken Focus Areas" around

Butterfly and moth expert Phil Koenig of O'Fallon helps Lindsay Firth learn about butterflies at the Foundation's Second Annual Prairie BioBlitz at Golden Prairie, held in June.

the state as the best remaining locations to focus conservation efforts for prairie-chickens and other prairie species. These focus areas laid the groundwork for the establishment of grassland Conservation Opportunity Areas (COAs) by the Missouri Department of Conservation, part of Missouri's Comprehensive Wildlife Strategy.

"Our goal is to protect and restore additional blocks of prairie in grassland COAs," said Stan Parrish, the Foundation's current president. "We are eager to work with individual landowners, the Department of Conservation and any other partners to achieve this." A prairie landowner himself, Parrish spends many volunteer hours conducting controlled burns and keeping a close eye on many Foundation-owned prairies.

Pooling Prairie Resources

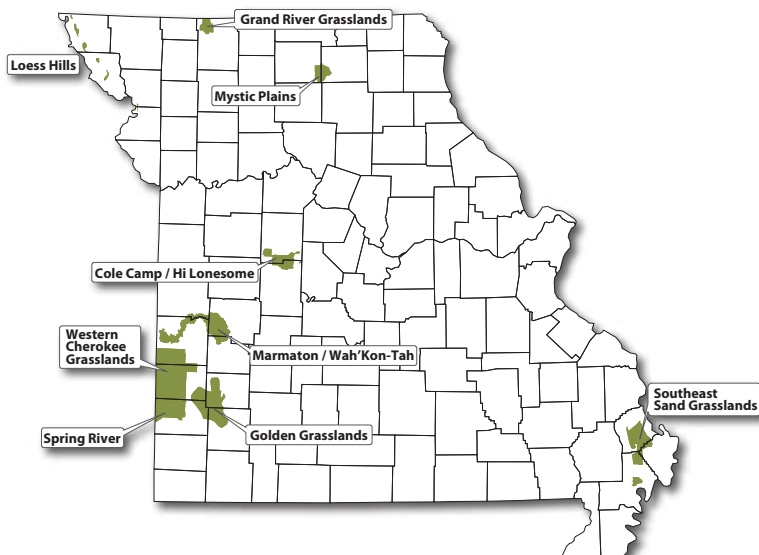
The Foundation's partnerships with other conservation groups and private landowners enable the restoration, management and protection of prairie on a larger scale than any one group or individual could accomplish alone. The Foundation generates enthusiasm among landowners to improve prairie habitat, shares technical knowledge with them and leverages funding for restoration work by serving as a grantee or grant partner on many projects.

Private prairie in the Mystic Plains COA in northeastern Missouri has benefited from one such recent partnership. In 2010, the Foundation completed a three-year \$70,000 grant from the U.S. Fish and Wildlife Service to restore native prairie and manage grasslands in Adair and Sullivan counties, partnering with the Department of Conservation and private landowners to improve more than 2,000 acres through elimination of woody cover, fence removal, hay field resting, prescribed fire assistance and invasive species control. The Foundation, private landowners and the Department of Conservation also provided funding, bringing the total sum for grassland management and restoration to \$110,000. The work resulted in greater prairie species diversity, expanded open vistas and more continuous habitat needed by grassland birds and other wildlife—for less than \$55 an acre.

"I have a great relationship with the Missouri Prairie Foundation," said John Murphy, private land conservationist with the Department in Adair and Sullivan counties. "It's like a car dealership. Foundation members are out on the showroom floor, drumming up interest among private landowners in prairie conservation. Then the landowners come to me and we talk about financing and how to get it done."

Grassland Conservation Opportunity Areas

Several prairie-chicken focus areas laid the groundwork for the establishment of grassland Conservation Opportunity Areas. One of the Missouri Prairie Foundation's prairie protection strategies is to work with partners to expand wildlife-friendly grasslands in these COAs.



Engaging Future Prairie Stewards

The vision statement of the Foundation "is to awaken and engage the passion of others to protect and restore native grassland communities, for the benefit and enjoyment of present and future generations." Its board members, staff and members go about encouraging the prairie spark in many ways.

Since its founding, the Foundation has organized and promoted prairie symposia, seed-collecting workshops, hikes, prairie campouts and prairie and glade restoration workdays; sponsored lectures and photography exhibits; and continues to host numerous prairie-related events throughout the year. It also publishes the *Missouri Prairie Journal*, a periodical providing detailed articles on prairie management and biodiversity, beautiful photography, and a new section this year, Steve Clubine's Native Warm-Season Grass News.

Advice and restoration information from individual Foundation members has helped introduce others to prairie, including Rudi Roeslein of St. Louis, now a Foundation board member and an avid prairie restorationist. “I think my life used to be a lot simpler before my prairie love affair started and invaded my waking and sleeping hours with plans on how to save and restore it,” said Roeslein. “We can never completely reconstruct a real prairie but make a facsimile. That is why the Foundation’s work to conserve original prairie is so critical in giving us the benchmark of what we have to shoot for and what we need to preserve. My prairie restoration work has been a hopeful journey that has made my life richer.”

The Foundation’s now annual Prairie BioBlitz brings biologists and prairie enthusiasts together for a weekend of intense prairie nature study, species discovery and inventory, camping and fun. “The Foundation’s BioBlitz at Golden Prairie this past June was the best outdoor event I have attended in 20 years,” said Barbara Van Vleck, a Foundation member and a Missouri Master Naturalist from Kansas City. “The event provided expert instructors whose enthusiasm was inspiring as we surveyed the biodiversity found on Golden Prairie. We hear a lot about the ecosystems of forests and deserts, but I was amazed to see first-hand the wonders of Missouri’s prairies full of wildflowers and swaying grasses, teeming with colorful wildlife and beautiful birds such as the scissor-tailed flycatcher and the bright song of the dickcissel. I am a new member of the Foundation, and look forward to helping to preserve and conserve these jewels of Missouri for the enjoyment of future generations.”

When Crawford looks back at the past 45 years, his pride in the organization is obvious. “Although there is much prairie conservation work to be done by all prairie partners in the state, the Foundation has done what it set out to do,” said Crawford. “It created an awareness of the importance of prairie among citizens and continues to do so to this day. I’m proud to be a member and I invite others to join me.”

For more information about the Missouri Prairie Foundation or to become a member, visit www.moprairie.org, send a message to info@moprairie.com, or call 888-843-6739. ▲



Missouri Prairie Foundation prairies provide habitat for thousands of plants and animals, including 20 species of conservation concern, such as the upland sandpiper.

October 8, 2011—An Evening on the Prairie

In conjunction with the Town of Cole Camp’s annual Oktoberfest and Prairie Day, the Missouri Prairie Foundation and Hi Lonesome Chapter of the Missouri Master Naturalists will host an Evening on the Prairie at a 400-acre private prairie just outside of town. All are welcome to participate in this free event! Afternoon wagon tours of the prairie and demonstration of bird mist netting will be followed by a complimentary reception, live music from Prairie Strings of Columbia and star gazing. For full details, and to RSVP, visit www.moprairie.org.






AIMING FOR THE FUTURE

Missouri's shooting ranges target outdoor skills,
safety and the next generation of hunters.

by REBECCA MAPLES • photos by DAVID STONNER



I grew up hunting. It's just part of me," said Keith Haley.

Haley, a volunteer shotgun and taxidermy instructor at Andy Dalton Shooting Range and Outdoor Education Center in Bois D'arc, Mo., loves wing shooting for duck, pheasant and quail. He has been shooting at the range for seven years, and he put in almost 300 hours of volunteer work in 2010 alone.

Haley shares his passion for hunting and shooting sports with Missourians across the state. Some of the most treasured Missouri memories have been made in tree-stands, duck blinds and camouflage. However, shooting sports are enjoyed beyond the woods and bottomlands as well.

The Missouri Department of Conservation maintains five staffed and more than 70 unstaffed shooting facilities around the state to provide fun, safe places to practice shooting and archery skills.

Missouri has a rich history of hunting and shooting sports. With more government-provided shooting ranges than any other state, Missouri is a national leader in public range development. Such facilities date back to 1952 when August A. Busch Memorial Wildlife Area featured the state's first archery range. Interest in range development rose with expanding population and rural development and peaked with the rise of hunter education.

"From its beginning in 1957, hunter education has always advocated that hunters practice shooting skills and sight in their firearms

The five staffed shooting ranges across the state serve approximately 140,000 people each year.



and bows," said MDC State Hunter Education and Range Coordinator Tony Legg. "Shooting ranges provide safe opportunities to do that."

As Missourians recognized the need for safe and accessible shooting ranges, MDC began developing these ranges in 1972 with the construction of a staffed range at August A. Busch Memorial Wildlife Area in Defiance, near St. Charles. Range development grew to include Jay Henges Shooting Range in High Ridge near St. Louis; Lake City Shooting Range in Buckner, near Independence; Andy Dalton Shooting Range outside Bois D'arc, near Springfield; and Parma Woods Shooting Range in Parkville, near Kansas City. Combined, these five facilities serve approximately 140,000 shooters and program attendees each year.

The staffed facilities provide rifle and pistol ranges with covered booths, training and meeting rooms, outdoor skills training programs



and special events. Other services vary by range and include shotgun patterning ranges; field, broadhead and 3-D archery ranges; and trap and skeet ranges.

Get With the Programs

Each staffed shooting range is also an outdoor education center that provides shooting and non-shooting programs such as fishing, camping and Dutch-oven cooking courses for the whole family. The staffed ranges offer hundreds of shooting programs each year including classes in basic shotgun and handgun, archery, trap and skeet shooting, home firearms safety and advanced wing shooting for hunters.

In addition to regular programming, staffed shooting ranges and outdoor education centers host special events. For example, this year Andy Dalton Shooting Range and Outdoor Education Center organized its eighth annual “A Day at

the Range” and Outdoor Adventure Fair, a free event open to people with disabilities and their families and friends.

“A Day at the Range” is an opportunity for people with disabilities to enjoy nature and learn shooting and outdoor skills at their own ability levels,” said Michael Brooks, outdoor education center supervisor at Andy Dalton Shooting Range. About 600 participants in 2011 attended the event to shoot pellet guns and .22 rifles, practice archery and fishing, and participate in assisted shotgun shooting.

According to Brooks, the outdoor education center also organizes a youth and women’s dove hunt, a youth waterfowl hunt, managed deer and turkey hunts, and a deer hunt for people with disabilities. All staffed ranges and outdoor education centers support programming and events for people of different ages and backgrounds and whole families.

Shooters of all ages try out the newly remodeled full projectile containment range facility at Jay Henges Shooting Range near St. Louis.

Youth under the age of 16 must be accompanied by an adult, both as a safety precaution and as a way of helping them learn as they go.

“The staffed shooting ranges and outdoor education centers are able to take people from the novice level and, through training, to real hunting experience in the field, which is quite an accomplishment for all involved,” Legg said, noting the importance of training proficient, responsible hunters.

“With hunting comes responsibility,” said Jeff Cockerham, MDC Outreach & Education supervisor for the Central Region and frequent hunter-education instructor. “This responsibility includes being safe, being respectful of the animals and being respectful of other hunters. That’s what we teach at these programs.”

Safety First

Staffed shooting ranges provide a safe place for Missourians to practice shooting skills. Safety considerations include handling equipment properly, using proper eye and ear protection, and considering the welfare of fellow hunters and trail companions.

“Safety is our main priority,” Haley said. “The ranges demonstrate that with every program they have, from fishing to shooting shotguns.”

Outdoor education center supervisors at each range receive training from the National Rifle Association’s (NRA) Range Development and Operations Conference and conduct training





“HUNTER EDUCATION HAS ALWAYS ADVOCATED THAT HUNTERS PRACTICE SHOOTING SKILLS AND SIGHT IN THEIR FIREARMS AND BOWS. SHOOTING RANGES PROVIDE SAFE OPPORTUNITIES TO DO THAT.”

—Tony Legg, MDC State Hunter Education and Range Coordinator

for outdoor education center staff along with the NRA's Range Safety Officer course for all staff. They enforce safety measures such as muzzle control, caliber limitation, mandatory ceasefires, no fully automatic firearms and much more.

Range staff are not the only ones maintaining the safety and cleanliness of the ranges. Staffed shooting ranges and outdoor education centers rely heavily on help from volunteer instructors like Haley, along with a significant amount of maintenance work.

John Zimmerly, 2010 volunteer of the year between the two staffed St. Louis-area ranges, has donated more than 1,500 hours to Jay Henges Shooting Range since 2009.

Maintenance and safety also depend on the Department's "adopt-a-range" program. Individuals, families, shooting clubs or other organizations can adopt all or part of a staffed or unstaffed range. Special signage recognizes their support.

"The ranges are for the public, and the adopt-a-range program allows the public to take ownership of their ranges by helping keep them clean and safe," Legg said. A range adoption can be arranged by contacting a range manager or local MDC office.

Youth under the age of 16 must be accompanied by an adult, both as a safety precaution and as a way of helping them learn as they go.

"Hunter education is one of the main drivers behind shooting ranges," Legg said. "Once you teach people how to hunt, they need a place where they can go to become proficient. That's one of the big reasons the Department of Conservation developed these shooting ranges."

According to Andy Dalton Shooting Range volunteer Louis Boos, the best feature of the staffed shooting ranges is the controlled environment that assures shooters.

"Some people see unsafe shooting practices and decide they don't want to be a part of it. Then they see how it's done at the staffed ranges, and they know that's the way it should be," Boos said. "People might be doing something wrong, but the staffed ranges always have someone there to correct mistakes."

Brooks says that is exactly the goal.

"We have trained staff who have the ability to share their passion with new people who want to be involved in hunting or shooting but don't know how to take the first step," Brooks said. "These facilities give people the opportunity to develop their hands-on skills through practice and programs in a safe environment."

Programs in Action

"The programs and services that the staffed shooting ranges offer are important both for bringing in new hunters and for bringing people back to hunting," Cockerham said.

Outdoor education center supervisors at each staffed range receive extensive safety training in order to enforce safety measures at the ranges.



Lake City Shooting Range

Many program attendees are first-time shooters who haven't had the opportunity to develop their skills. For example, the hunting and shooting skills of youth might be limited by parents who don't have the knowledge to teach them. However, many parents of aspiring young shooters often rise to the challenge of developing their own skills to help their children.

"We have a lot of opportunities for current hunters to take advantage of, but we also tailor many programs and events to youth and families," Brooks said. Targeting both youth and their families opens hunting and shooting fun to multiple generations. Each staffed range has its own Web page that lists information and upcoming programs.

"These programs mentor children as well as parents, who can develop their own shooting skills while learning how to help their kids develop theirs," Cockerham said.

Family sharing in the shooting sports is not limited to parents and children. Jack Nicholson, who has shot trap at Jay Henges Shooting Range for six years, recently began going with his wife, who enjoys shooting small-caliber pistols and throwing targets for her husband.

"I taught her to shoot years ago, but she got out of it. She got to a point where she didn't shoot regularly like I did," Nicholson said. "It's enjoyable to go shooting with her. We're both retired, and it's something we like to do together."

Hunting and shooting sports are fun for friends, too. Len Hoffmeister and Jim Crowe met at Jay Henges Shooting Range while Len was an employee. They began shooting together and eventually formed a weekly retired men's shooting group, which meets every Thursday morning at the range. While practicing with friends, Hoffmeister also recognizes the importance of sharing the shooting sports among families.

"It gives people a chance to pass the shooting ability on to their children, both through the programs and by just being able to take them to the range to show them how to use a firearm properly," Hoffmeister said.

Aiming for the Future

"We have a rich heritage in Missouri of hunters and shooters, and that's a tradition that should be maintained," Legg said.



New hunters and shooters need to discover the sport to maintain both hunting heritage and the health of Missouri's wildlife.

As the state's population becomes more urbanized, hunters and shooters must consider how residential and commercial development could affect open-land areas and the opportunities they provide. Missouri's five staffed shooting ranges are located near urban areas, which offsets this threat.

However, for hunting and shooting sports to continue thriving in Missouri, the role of family and tradition cannot be underestimated.

"I think these skills need to be passed on to other generations; otherwise they're going to die out," Haley said. New hunters and shooters need to discover the sport to maintain both hunting heritage and the health of Missouri's wildlife.

"Hunting is the most economical and most humane way to manage wildlife populations and avoid conflicts between animals and humans," Legg said.

Properly managing wildlife involves preventing overpopulation and subsequent disease. It also means using ethical and humane hunting methods to do so.

"The public expects hunters to be able to make quick, clean kills on the animals they pursue.



Lake City trap and skeet range

The Department of Conservation sets up hunting seasons to allow us to harvest the excess of any given population of animals. Because the public expects us to be proficient at our sport, hunters need some place to help them build those skills,” Brooks said. “In order for us to be able to continue the aggressive management it takes to control wildlife populations, we have to bring along a new generation of hunters to take an active role in conservation.”

“Shooting ranges and education centers give people a place to go where they can feel safe and participate in the hobbies and sports they enjoy,” Haley said. “I love to see people learning how to hunt and shoot and accomplish what they set out to do. I’m glad I can be a part of it.”

For more information on Department of Conservation staffed and unstaffed shooting ranges, visit mdc.mo.gov/node/6209. ▲

MDC Shooting Ranges

MDC has five staffed shooting ranges that provide safe and inviting places to practice shooting skills. Please see the phone numbers and Web pages listed below to get more information on each range.

- 1) Parma Woods Shooting Range,
816-891-9941, mdc.mo.gov/node/283
- 2) Lake City Shooting Range,
816-249-3194, mdc.mo.gov/node/282
- 3) Jay Henges Shooting Range, 636-938-9548, mdc.mo.gov/node/299
- 4) August A. Busch Shooting Range,
636-300-1953 ext. 251, mdc.mo.gov/node/270
- 5) Andy Dalton Shooting Range, 417-742-4361, mdc.mo.gov/node/288

MDC also maintains more than 70 unstaffed shooting ranges throughout the state. For information on our unmanned ranges, including a complete listing of locations with phone numbers, visit mdc.mo.gov/node/6209.





What's a **Healthy** Stream?

Learning about aquatic communities through the RAM program.

by MATT COMBES • *photos by* DAVID STONNER

Stream at Shoemaker Conservation Area near Kirksville





BEEP, BEEP, BEEP. FOUR BIOLOGISTS wielding dip nets and wearing funny-looking backpacks stare intently into the waters of a small creek. Suddenly, silver flashes as small fishes are drawn toward the scientists by high-voltage electricity. Four nets dart into the water in unison and come back to the surface with several species of fishes flipping inside. Great! The equipment is working and fish community sampling has started. It's a typical scene from a day's work with the Resource Assessment and Monitoring Program (RAM) field team.

The RAM Program

The goal of the RAM Program is to assess and monitor long-term trends in the health of Missouri's warm-water streams. There are five factors that affect stream health, and each of these must be balanced for a stream to be healthy:

- Water quality,
- Stream flow,
- Physical habitat (channel shape, rock/soil makeup and vegetation in and around a stream),
- Stream system connectivity (how the watershed interacts with the surface and ground-water), and
- Biotic interactions (the way different species interact).

The RAM Program samples water quality and habitat and compares the information to healthy sites to determine benchmarks for restoration efforts. However, the program's focus is on the living organisms in streams because their well-being is the ultimate goal of our stream conservation efforts. If we see improvement in animal and plant life, then we know our efforts are effective.

Fish and macroinvertebrates (animals that do not have a backbone, but are large enough to be seen with the naked eye, including worms, mollusks, crayfishes, mites and many kinds of insects) are affected differently by water quality

Physical habitat, such as channel shape, is just one factor that affects stream health. The New Madrid ditch is an example of an artificially straightened stream.



and poor habitat, so it is important to sample a variety of organisms. Traumatic events such as toxic waste or sewage spills, or rain runoff contaminated with herbicides or pesticides, usually kill most fish and macroinvertebrates in an area. Long-term water flow changes and major habitat loss can also destroy these populations.

In a minor, or temporary disturbance, such as low-level chemical pollution, excessive sedimentation or nutrients, or increased flooding, fishes can swim away from the area and return when conditions improve. However, most macroinvertebrates cannot get away. When a community of macroinvertebrates is wiped out, recolonization may not occur until much later.

Healthy aquatic communities have an appropriate balance of species that use stream habitat efficiently. In these communities, there is a wide variety of species, and each tends to have specialized feeding, spawning, shelter and

water quality needs—these are called specialist species. Degraded, unhealthy, aquatic communities usually have just a few species with similar needs in feeding, spawning and shelter that are able to withstand poor water quality—these are called generalist species.

Stream health ratings, called aquatic community indicators, are used to make sense of how fish and macroinvertebrate communities are being affected by any imbalance in the five factors of stream health. Indicators are developed by comparing the fish and macroinvertebrate communities from the sampled stream with samples from the best remaining streams in the area, called reference streams. Reference streams represent what streams in the area should be like. Streams that have diverse communities of specialist species score high, but streams dominated by a few generalist or non-native species score lower.

A RAM stream crew electro-fishes to gather sample fish species on the South Fork of the Blackwater River. In healthy aquatic communities, there is a wide variety of stream species.

How Community Indicators Work

Sampling sites for health assessments are chosen at random from 17,507 miles of permanently flowing, but wadeable (generally less than chest deep) Missouri streams. Landowners are asked permission to access the streams, and sites are sampled twice, once in the summer and once in the fall. On the day of summer sampling, the crew arrives early and collects water samples before the site is disturbed. Then nets are set to block the upstream and downstream ends of the site, and the fish community is sampled by electrofishing and seining. Physical habitat features are measured after fish sampling is done. In the fall, the site is visited once more to sample the

macroinvertebrate community with fine-mesh dip nets. During winter, fishes and macroinvertebrates are identified in the lab.

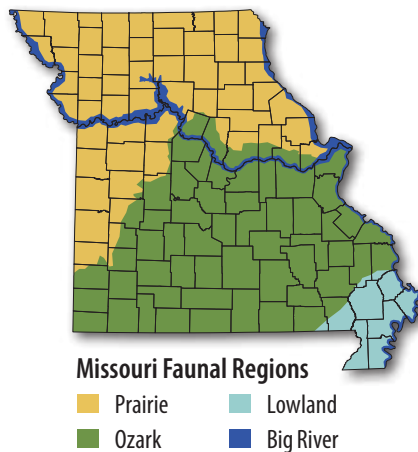
After the values are calculated for each site by comparing them to reference streams, the percentage of miles of stream in good, fair or poor health can be estimated. Sampling is rotated among three large regions (see sidebar) from year to year rather than sampling statewide each year. Samples from the three regions are combined into a statewide assessment about every five years. This way, a random sample of 48 miles of streams becomes a cost-effective way to estimate the health of the many miles of warm-water, wadeable streams in Missouri.

Animal Life Regions

The Ozark Faunal Region (faunal refers to animal life) occupies the Ozarks of Missouri, an area found mostly south of the Missouri River. The Ozarks is a hilly area of thin, stony soil over granite, sandstone or limestone bedrock. Much of the area is forested. Ozark streams are generally clear, cool and have gravel bottoms. Submerged vegetation is often found in backwaters and side channels. Sixty-seven species of fishes have their range centered in the Ozark Faunal Region, and 20 of these species are found nowhere else in the world. Suckers, sunfishes, minnows and darters are the dominant groups of fishes found in Ozark streams.

The Prairie Faunal Region is found north and west of the Ozark Faunal Region and lies mostly north of the Missouri River. The Prairie is a flat or gently rolling area of deep soils. Most of the region was once prairie, but much is now row crop agriculture. Prairie streams tend to be turbid and have sand or silt bottoms, but many Prairie streams in west-central and northeast Missouri have gravel bottoms. Eighteen fish species have their range centered in the Prairie. Carpsuckers, suckers and minnows are the dominant groups of fishes in Prairie streams.

The Lowland Faunal Region lies in southeast Missouri, south of the Ozarks. The lowlands are a flat alluvial plain once covered by swamps and forests. The Lowlands have been extensively ditched for drainage and converted to row crop agriculture. Most of the aquatic habitat left in the Lowlands is ditches rather than streams. Ditches generally have soft bottoms, lots of vegetation, and may be turbid or clear. Twenty-three Missouri fish species have their ranges centered in the Lowlands. Minnow and darters are common in the Lowlands, but no groups of fishes really dominate lowland communities.



Missouri Streams Status

The RAM program has collected 396,699 fishes of 152 species at 450 locations to assess stream health across Missouri since 2004. The more common species were from the minnow, sucker, sunfish, perch, sculpin, gar and catfish families. Unusual species were from the bowfin, pickerel, pirate-perch, trout perch, trout and lamprey families. Some of these collections represent new locations for species in the state, some represent collections of species from river basins where they had not been recorded in more than 50 years, and others are collections of rare species. The vast majority of species were where they were expected to be.

Fifty-seven percent of fish communities sampled so far are in good health, being similar to reference stream communities. Forty-two percent are degraded to some degree, and just 1 percent are highly degraded. In general, most streams sampled in the Ozarks are in good health, but most streams in the Prairie portion of Missouri are somewhat degraded. The few highly degraded fish communities are associated with urban areas.

Macroinvertebrate community collections include 363,510 individuals of 568 different taxa. (The word "taxa" is used, instead of species, because many can only be identified to the level of family or genus. Taxa is a general term for the different levels of classification.) Six insect species have been collected that were not previously known from Missouri, including one that is a nonnative rice crop pest. Two species of rare snails have been found to inhabit watersheds



where they were previously not known to occur.

Macroinvertebrate community health was similar to fish communities with 61 percent good, 20 percent degraded, and 19 percent highly degraded. Good, degraded and highly degraded macroinvertebrate communities are distributed evenly across the state without the distinct regional differences apparent in fish communities.

Information in Action

RAM Program data provide conservation benefits beyond a cost-effective estimate of the health of warm-water, wadeable streams statewide. The Conservation Department uses the information to make better decisions for conserving Missouri's aquatic resources.

Aquatic community and aquatic species distribution information is used to prioritize and focus conservation efforts in watersheds across Missouri. Species distribution information is used to prioritize conservation efforts for sensitive or threatened species as well. Locations of sensitive species are used to assess potential impacts of development activities like power-line extension, bridge construction and impoundment construction. In the future, the

Conservation Department will also be able to make better decisions for conserving Missouri's aquatic resources based on the information we are collecting now.

Our partners also make use of RAM Program data. The RAM Program is a partnership with the Department of Natural Resources, and they use the data in their watershed planning, protection and reporting efforts. University students and professors use the information about aquatic communities to advance our understanding of connections between Missouri's land and water resources. Missouri has contributed RAM Program data to federal agencies and national conservation organizations to help them assess the health of the nation's waters and prioritize their national aquatic conservation efforts.

The Resource Assessment and Monitoring Program's most important partners are Missouri's citizens. Citizen concern about Missouri's aquatic resources provides the reason and support for the RAM Program. The vast majority of wadeable streams in Missouri flow through private lands, and we thank the many landowners who have granted us permission to access their streams. Without access, we would never be able to do our stream health checkups! ▲

A RAM survey crew is seining to sample fish in the test area of the Blackwater River. From the data collected since 2004, 57 percent of fish communities sampled are in good health, 42 percent are degraded to some degree, and just 1 percent are highly degraded.

Snowy Egret

Don't miss out on an opportunity to see these graceful birds before they leave for the winter.

THE FIRST TIME I saw a snowy egret (*Egretta thula*) was in a photograph. As I perused the image my gaze settled on the bird's golden feet. I assumed somebody had altered the photograph as a prank because it seemed unnatural that a bird would possess such flamboyant foundations. Intrigued, I grabbed my favorite bird guide and turned to the snowy egret page where the first sentence read, "Note golden slippers." From that moment on I looked forward to seeing my first snowy egret in real life. This past spring my opportunity arrived unexpectedly as I sat by a creek in St. Louis' Forest Park. As I hid in a patch of bulrush, my telephoto lens trained on my favorite kingfisher perch, a white apparition with feet of gold landed on the very snag I was monitoring. After a moment of confusion I realized that I was only a few meters from a lovely snowy egret in stunning breeding plumage.

The snowy egret is a smallish white heron with a black bill, black legs and yellowish-gold feet. It has beautiful yellow eyes with yellow lores (area surrounding the eye) that become deep orange during breeding season. When in breeding plumage, a short veil of delicate feathers dances around the snowy's head in the lightest breeze. A drape of similar plumage falls from its lower neck. The flowing back feathers terminate in an exquisite curvilinear display making the species one of the most delicately beautiful birds in Missouri.

Snowy egrets are listed as endangered in Missouri and typically inhabit marshes and forests along the Mississippi River in the southeastern part of the state where they breed in colonies, often with other herons. Nests of sticks are built in trees and low-growing marsh plants. When the eggs hatch, both parents tend to the young until they leave the nest in a month or so. Snowy egrets feed on a variety of prey including fish, earthworms, crayfish, reptiles and amphibians.

Snowy egrets were nearly wiped out in the early 1900s as they were hunted for their gorgeous plume feathers. After recovering from that decline, snowy egret populations are now at risk due to loss of habitat, poor wetland water quality and human disturbance at nest sites. Protection and restoration of wetland and riparian corridor habitat is important to the recovery of snowy egrets. The Conservation Department has developed Best Management Practices that are helping to ensure viability of this elegant species.

I consider myself privileged to have photographed the snowy egrets that descended on Forest Park this year. I especially enjoyed watching them shuffle through the creek in their unique feeding pattern, snatching sunfish from water with aplomb. I later learned that they were likely nesting across the Mississippi River at Horseshoe Lake in Illinois. As I sorted through all of the images, I felt that this one best exemplified the pure visual poetry of the snowy egret, golden slippers and all.

—Story and photo by Danny Brown





Hughes Mountain NA

Enjoy unusual volcanic rock formations and views of the Ozark landscape from atop this ancient mountain.



SEPTEMBER IS A great time to hike, watch wildlife and enjoy scenic views at Hughes Mountain Natural Area in Washington County. A combination of igneous glades and three types of woodland, the 462-acre area was designated a natural area in 1982 to protect its unique geology and natural communities. In fact, the area's dramatic geology is what makes it interesting to visitors and forms the basis of its natural diversity.

Hughes Mountain, named for the region's first European settler, rises 380 feet above the surrounding Big River floodplain and is comprised of rhyolite, a type of volcanic rock.

Hikers will enjoy the moderately challenging .75-mile Devil's Honeycomb Trail, which leads to a stark, chunky volcanic rock formation at the summit. Known as columnar jointed rhyolite, this feature was formed from lava flows around 1.4 billion years ago. It's the same kind of formation that appears at many other well-known sites, including Devil's Tower in Wyoming and Giant's Causeway in Ireland.

Aside from fascinating geologic features, you'll also get great views of the Ozark countryside below. As you hike, notice that igneous glades are harsh places for plants, with lots of exposed rock and hot, dry conditions. Glade plant species, therefore, are hardy and diverse. They include little bluestem, broomsedge, poverty grass, the small but colorful flame flower, prickly pear cactus, yellow star grass, spiderwort and wild hyacinth. Lichens and mosses are also common on many of the rocks.

Animals often found on these glades include fence lizards, lichen grasshoppers and prairie warblers. In late September, you may also see monarch butterflies, which occasionally stage on Hughes Mountain vegetation during their journey south. They are best seen in the morning before they warm up and take off. Keep your eyes and ears sharp for fall migrating birds, such as the yellow-rumped warbler.

The area's high natural diversity is maintained with a variety of management techniques, including prescribed burning and cedar removal.

To get to the area, travel from Potosi south 11 miles on Highway 21, then turn left on Highway M. Follow Highway M for 5 miles, and look for the parking lot on the south side of Highway M. As always, visit the area's online atlas page (listed below) for the map and brochure before traveling.

—Bonnie Chasteen, photo by Noppadol Paothong

Recreation opportunities: Wildlife watching, hiking and squirrel and turkey hunting during season.

Unique features: An unusual geologic formation known as "devil's honeycomb" atop Hughes Mountain

For More Information

Call 636-441-4554 or visit www.mdc.mo.gov/a8252.





Hunting and Fishing Calendar

FISHING

OPEN CLOSE

Black Bass (certain Ozark streams, see the *Wildlife Code*)

5/28/11 2/29/12

impoundments and other streams year-round

Bullfrogs and Green Frogs

Sunset Midnight
6/30/11 10/31/11

Nongame Fish Giggling

9/15/11 1/31/12

Trout Parks

3/01/11 10/31/11

HUNTING

OPEN CLOSE

Coyote

5/09/11 3/31/12

Crow

11/01/11 3/3/12

Deer

Archery

9/15/11 11/11/11
11/23/11 1/15/12

Firearms

Urban Zones

10/07/11 10/10/11

Early Youth

11/05/11 11/06/11

November

11/12/11 11/22/11

Antlerless

11/23/11 12/04/11

Muzzleloader

12/17/11 12/27/11

Late Youth

1/07/12 1/08/12

Dove

9/01/11 11/09/11

Furbearers

11/15/11 1/31/12

Groundhog

5/09/11 12/15/11

Pheasant

Youth (North Zone only)

10/29/11 10/30/11

North Zone

11/1/11 1/15/12

Southeast Zone

12/01/11 12/12/11

Quail

11/1/11 1/15/12

Youth

10/29/11 10/30/11

Rabbits

10/1/11 2/15/12

Rails (Sora and Virginia)

9/01/11 11/09/11

Squirrels

5/28/11 2/15/12

Turkey

Archery

9/15/11 11/11/11
11/23/11 1/15/12

Fall

10/01/11 10/31/11

Waterfowl

please see the *Waterfowl Hunting Digest* or
see mdc.mo.gov/node/3830

Wilson's (common) Snipe

9/01/11 12/16/11

Woodcock

10/15/11 11/28/11

TRAPPING

OPEN CLOSE

Beavers & Nutria

11/15/11 3/31/12

Furbearers

11/15/11 1/31/12

Otters & Muskrats

11/15/11 2/20/12

For complete information about seasons, limits, methods and restrictions, consult the *Wildlife Code* or the current summaries of *Missouri Hunting and Trapping Regulations* and *Missouri Fishing Regulations*, *The Spring Turkey Hunting Regulations and Information*, the *Fall Deer and Turkey Hunting Regulations and Information*, the *Waterfowl Hunting Digest* and the *Migratory Bird Hunting Digest*. For more information visit mdc.mo.gov/node/130 or permit vendors.



When insects perform Shakespeare

Contributors

MATT COMBES is an MDC fish community ecologist, and he has coordinated the RAM program since 2003. He enjoys the few days each year when he gets to be fully immersed in his research. Matt lives in New Boston with his family. They enjoy studying aquatic, terrestrial and garden ecology together.



CAROL DAVIT is the director of communications and development for the Missouri Prairie Foundation and the editor of the *Missouri Prairie Journal*. Her work includes finding ways to protect more of our native grasslands and helping Missourians learn about, enjoy and conserve prairie.

REBECCA MAPLES is a Jefferson City native studying mass communications at Benedictine College in Atchison, Kan. Her interest in conservation grew during an internship in the Department's Outreach & Education Division. She plans to continue writing and enjoying the outdoors.



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Facebook is another great way to get information about nature and outdoor recreation in Missouri.

Wingshooting Workshops

Free workshops to help hunters develop wing-shooting skills continue through Oct. 8. These are hands-on events, including range time with expert shooting coaches and ammunition provided. Topics include choke and load selection for nontoxic ammunition, shooting skills, range estimation and shotgun patterning. Events are scheduled for:

- » **Warrensburg**, Sept. 10 at University of Central Missouri, 660-530-5500;
- » **St. Louis**, Sept. 16 through 18 at Henges Range, 636-938-9548;
- » **Ashland**, Sept. 17 at the Charles W. Green Conservation Area, 573-882-8388, ext. 230;

- » **St. Joseph**, Sept. 24 at MDC's Northwest Regional Office, 816-271-3100;
- » **Kirksville**, Sept. 24 at MDC's Northeast Regional Office, 660-785-2420;
- » **St. Louis**, Sept. 30 through Oct. 2 at Busch Range, 636-300-1953, ext. 302;
- » **Bois D'Arc CA**, Oct. 1 at Dalton Range, 417-742-4361;
- » **Kansas City**, Oct. 8 at Lake City Range, 816-249-3194;
- » **Hannibal area**, Oct. 8 at Ted Shanks CA, 573-882-8388, ext. 230.

For more information on the effective wingshooting workshops, visit mdc.mo.gov/node/3710.



Northern pintail

AGENT NOTES

Learn the regulations before you pick a flower.

TAKE A DRIVE down any Missouri road and you're likely to see all kinds of wildflowers growing in the ditches and right-of-ways. These wildflowers are not only pleasing to the human eye but they also have an important role in the environment. While it may be tempting to pull over and pick a few for the vase on the kitchen table or dig some to transplant to your own yard, it's not legal to do so.

The removal of any tree, shrub, vine, wildflower, grass or fern from any real property of the Transportation Commission, or right-of-way of any highway or roadway, is illegal. The good news is any seeds, fruits,

nuts, berries or edible wild greens may be collected for the personal consumption of the taker. However, none of the seeds, fruits, nuts berries or edible wild greens may be offered for sale by the taker.

In regard to the collection of wild plants, plant products and mushrooms on most conservation areas throughout the state, the *Wildlife Code of Missouri* states in 3 CSR 10-11.135(1), "Nuts, berries, fruits, edible wild greens and mushrooms may be taken only for personal consumption, unless further restricted in this chapter." The *Wildlife Code* does not allow the taking of any of the aforementioned edible items from any Conservation Nature Center or the Conservation Commission Headquarters located in Jefferson City.

The next time you're out take time to admire the beautiful wildflowers growing along Missouri's roadways or throughout conservation areas but remember to just look and don't pick. Leave them so others can enjoy their beauty, too.



Jarrad Jewell is the conservation agent for Dallas County. If you would like to contact the agent for your county, phone your regional conservation office listed on Page 3.





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“I Am Conservation”

Ben Price and his dad, Randy Price, enjoy an opening-day teal hunt at Fountain Grove Conservation Area in Linn County. “Dad and I have been hunting ducks together for several years now,” said Ben Price. “Some of my earliest childhood memories are of tromping through the woods together early in the morning to get to the blind. As the years have gone by, I’ve learned to appreciate spending time with my dad in the duck blind, and teal hunting gives us a great opportunity to get out there early in the season and practice before the larger birds head south later in the fall. The fast-moving targets provide a challenging aspect to waterfowl hunting and oftentimes they leave my dad and I laughing at how fast they zoom by without us even getting a shot off.” —*Photo by David Stonner*